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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,645	07/28/2003	Kazuhiro Kagami	03500.017456	3604

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EXAMINER

LEE, HSIEN MING

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 08/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/627,645	Applicant(s) KAGAMI ET AL.	
	Examiner Hsien-Ming Lee	Art Unit 2823	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

HSIEN-MING LEE
PRIMARY EXAMINER

Lee
8/15/04

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Remarks

1. The 112-second paragraph rejection to claims 8 and 11 is withdrawn.
2. Applicant's cancellation to claim 8 is acknowledged. Thus, claims 1-7 and 9-11 are pending the application.
3. Claim 11 is objected to because of the following informalities: incomplete recitation. Changing "by the method according to claim 1" (lines 7-8) into – by the method comprising the steps of: forming a base pattern on a substrate; absorbing an organic metallic compound into the base pattern; and baking the base pattern in which the organic metallic compound is absorbed, wherein the base pattern forming step includes: applying a photosensitive resin containing a water-soluble photosensitive resin component and a water-soluble metallic compound onto the substrate; and exposing the photosensitive resin – is suggested.

(Note) The Examiner presumed that claim 11 is presented as an independent claim.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Hamaguchi et al. (US 5,631,753).

Hamaguchi et al. teach the claimed method of forming an electrode and wiring, comprising:

Art Unit: 2823

- forming a base pattern 7 (i.e. a photosensitive resin layer comprising diazo resin and palladium chloride, col. 11, lines 29-36) on a transparent substrate 13 (Fig.5);
- absorbing an organic metallic compound into the base pattern, i.e. immersing the base pattern or photosensitive resin layer 7 along with the transparent substrate 13 in an electroless plating solution (col. 11, lines 53) containing a water-soluble heavy metal salt (col. 7, lines 47-49), such as nickel plating solution containing a boron type reductant or hypophosphorous acid type reductant (col. 11, lines 45-51); and
- baking the base pattern which the organic metallic compound is absorbed, i.e. drying the transparent substrate along with the photosensitive resin and then subjecting to a heat treatment at 200 °C to make a light-shielding layer (col. 11, lines 53-57); wherein the base pattern forming step includes: applying a photosensitive resin containing a water-soluble photosensitive resin component (i.e. the **diazo resin**) and a water-soluble metallic compound (i.e. **palladium chloride**) onto the transparent substrate (col. 11, lines 29-36); and exposing the photosensitive resin to a light source (col. 11, lines 37-38).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamaguchi et al. in view of Fursue et al. (US 6,586,155).

Art Unit: 2823

In re claims 2 and 7, Hamaguchi et al. do not expressly teach that a compounding ratio of the water-soluble metallic compound to the photosensitive resin component is 1.0 % by weight to 20 % by weight.

Fursue et al., in an analogous art, suggest that the ratio is a consideration of increasing drying speed (col. 3, line 63 through col. 4, line 7).

Therefore, one of the ordinary skill in the art, at the time of the invention was made, would have been motivated to optimize the compounding ratio of Hamaguchi et al. to increase the drying and/or baking speed, as taught by Fursue et al., since the ratio variation is obvious to the ordinary in the art for optimizing the subsequent processing step, such as improve drying speed (col. 3, line 63 through col. 4, line 7, Fursue et al).

In re claims 3 and 9, Hamaguchi et al. do not teach that the water-soluble metallic compound is a water-soluble metallic compound including rhodium, bismuth, ruthenium, vanadium, chromium, tin, lead, or silicon (col. 3, lines 60-62).

However, the selection of the water-soluble metallic compound is obvious because it is a matter of determining optimum process condition by routine experimentation with a limited number of species. In re Jones, 162 USPQ 224 (CCPA 1955)(the selection of optimum ranges within prior art general conditions is obvious) and In re Boesch, 205 USPQ 215 (CCPA 1980)(discovery of optimum value of result effective variable in a known process is obvious). For example, one of the ordinary skill would have been motivated to select a desired water-soluble metallic compound capable of an electroconductive film, as evidenced by Fursue et al (col. 3, lines 29-35 and 59-62), in which Fursue et al teach that the water-soluble metallic

Art Unit: 2823

compound is a water-soluble metallic compound including rhodium, bismuth, ruthenium, vanadium, chromium, tin, lead, or silicon (col. 3, lines 60-62).

In re claims 4-5, Fursue et al. also remedy the deficiency in Hamaguchi et al. in that the organic metallic compound is a complex and a ligand thereof is a nitrogen-containing compound and the nitrogen-containing compound is a nitrogen-containing compound having at most 8 carbon atoms (col. 3, lines 36-46, Fursue et al.). Therefore, it would have been obvious to one of the ordinary skill in the art, at the time of the invention was made, to combine Fursue et al. with Hamaguchi et al to arrive the claimed invention, since by this manner it would improve the solubility of the organic metallic compound in water and reduce crystallizing property (col. 3, lines 47-53, Fursue et al.).

In re claim 6, Fursue et al. further remedy the deficiency in Hamaguchi et al. in that the organic metallic compound is a platinum complex (col. 3, lines 29-32 and col. 6, lines 19-22). Therefore, it would have been obvious to one of the ordinary skill in the art, at the time of the invention was made, to combine Fursue et al. with Hamaguchi et al to arrive the claimed invention, since by this manner it would be beneficial to obtain an electrode film with stable property (col. 3, lines 32-35, Fursue et al.).

In re claim 10, Fursue et al. also remedy the deficiency in Hamaguchi et al. in that the water-soluble photosensitive resin component is one of a polyvinyl alcohol-based resin and a polyvinyl pyrrolidone-based resin (col. 3, lines 18-22). Therefore, it would have been obvious to one of the ordinary skill in the art, at the time of the invention was made, to combine Fursue et al. with Hamaguchi et al to arrive the instant invention, since by this manner it would obtain a

satisfactory water solubility of the photosensitive resin component (col. 3, lines 18-22, Fursue et al.).

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (US 6,011,567) in view of Hamaguchi et al..

Nakamura et al., in Fig. 66 and related text on col. 44, line 65 through col. 45, line 39, teach a method of manufacturing an image-forming apparatus including a plurality of electron-emitting devices 610 and an image-forming member 616 (616r, 616g and 616b) for forming an image by irradiation of electron beams emitted from the electron-emitting devices, comprising forming said plurality of electron-emitting devices 610 and said image-forming member 616, at least an electrode 614 a/614b and a wiring 613a/613b.

Nakamura et al. do not teach comprising the method as recited in method 1. However, Hamaguchi et al teach the claimed method, comprising the steps of forming the base pattern; absorbing the organic metallic compound; and baking the base pattern, as stated previously.

Therefore, it would have been obvious to one of the ordinary skill in the art, at the time of the invention was made, to combine Nakamura et al. with Hamaguchi et al to arrive the claimed invention, since by this manner it would provide a satisfactory image-forming apparatus.

Response to Arguments

9. Applicant's arguments filed 6/3/04 have been considered but are moot in view of the new ground(s) of rejection.

Art Unit: 2823

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hsien-Ming Lee whose telephone number is 571-272-1863. The examiner can normally be reached on Tuesday-Thursday (8:00 ~ 6:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on 571-272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hsien-Ming Lee
Primary Examiner
Art Unit 2823

August 10, 2004

HSIEN-MING LEE
PRIMARY EXAMINER

8/10/2004